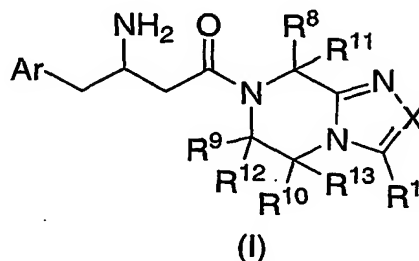


## WHAT IS CLAIMED IS:

1. A compound of structural formula I:



- 5 or a pharmaceutically acceptable salt thereof; wherein  
each n is independently 0, 1, or 2;  
X is N or CR<sup>2</sup>;

Ar is phenyl substituted with one to five R<sup>3</sup> substituents;

R<sup>1</sup> and R<sup>2</sup> are each independently selected from the group consisting of

hydrogen,

halogen,

hydroxy,

cyano,

C<sub>1-10</sub> alkyl, wherein alkyl is unsubstituted or substituted with one to five substituents  
independently selected from halogen or hydroxy,

C<sub>1-10</sub> alkoxy, wherein alkoxy is unsubstituted or substituted with one to five substituents  
independently selected from halogen or hydroxy,

C<sub>1-10</sub> alkylthio, wherein alkylthio is unsubstituted or substituted with one to five  
substituents independently selected from halogen or hydroxy,

C<sub>2-10</sub> alkenyl, wherein alkenyl is unsubstituted or substituted with one to five  
substituents independently selected from halogen or hydroxy,

(CH<sub>2</sub>)<sub>n</sub>COOH,

(CH<sub>2</sub>)<sub>n</sub>COOC<sub>1-6</sub> alkyl,

(CH<sub>2</sub>)<sub>n</sub>CONR<sup>4</sup>R<sup>5</sup>, wherein R<sup>4</sup> and R<sup>5</sup> are independently selected from the group  
consisting of hydrogen, tetrazolyl, thiazolyl, (CH<sub>2</sub>)<sub>n</sub>-phenyl, (CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub>  
cycloalkyl, and C<sub>1-6</sub> alkyl, wherein alkyl is unsubstituted or substituted with one

to five halogens and wherein phenyl and cycloalkyl are unsubstituted or substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens;

or R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are attached form a heterocyclic ring selected from azetidine, pyrrolidine, piperidine, piperazine, and morpholine wherein said heterocyclic ring is unsubstituted or substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one

to five halogens;

(CH<sub>2</sub>)<sub>n</sub>-NR<sup>4</sup>R<sup>5</sup>,

(CH<sub>2</sub>)<sub>n</sub>-OCONR<sup>4</sup>R<sup>5</sup>,

(CH<sub>2</sub>)<sub>n</sub>-SO<sub>2</sub>NR<sup>4</sup>R<sup>5</sup>,

(CH<sub>2</sub>)<sub>n</sub>-SO<sub>2</sub>R<sup>6</sup>,

(CH<sub>2</sub>)<sub>n</sub>-NR<sup>7</sup>SO<sub>2</sub>R<sup>6</sup>,

(CH<sub>2</sub>)<sub>n</sub>-NR<sup>7</sup>CONR<sup>4</sup>R<sup>5</sup>,

(CH<sub>2</sub>)<sub>n</sub>-NR<sup>7</sup>COR<sup>7</sup>,

(CH<sub>2</sub>)<sub>n</sub>-NR<sup>7</sup>CO<sub>2</sub>R<sup>6</sup>,

(CH<sub>2</sub>)<sub>n</sub>-COR<sup>6</sup>,

(CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub> cycloalkyl, wherein cycloalkyl is unsubstituted or substituted with one to three substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens,

(CH<sub>2</sub>)<sub>n</sub>-aryl, wherein aryl is unsubstituted or substituted with one to five substituents independently selected from halogen, cyano, hydroxy, NR<sup>7</sup>SO<sub>2</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup>,

CO<sub>2</sub>H, C<sub>1-6</sub> alkyloxycarbonyl, C<sub>1-6</sub> alkyl, and

C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens,

(CH<sub>2</sub>)<sub>n</sub>-heteroaryl, wherein heteroaryl is unsubstituted or substituted with one to three substituents independently selected from hydroxy, halogen, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens, and

(CH<sub>2</sub>)<sub>n</sub>-heterocyclyl, wherein heterocyclyl is unsubstituted or substituted with one to three substituents independently selected from oxo, hydroxy, halogen, C<sub>1-6</sub> alkyl,

and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens,  
wherein any methylene (CH<sub>2</sub>) carbon atom in R<sup>1</sup> or R<sup>2</sup> is unsubstituted or substituted with one to two groups independently selected from halogen, hydroxy, and C<sub>1-4</sub> alkyl  
5 unsubstituted or substituted with one to five halogens;

each R<sup>3</sup> is independently selected from the group consisting of  
hydrogen,  
halogen,  
10 cyano,  
hydroxy,  
C<sub>1-6</sub> alkyl, unsubstituted or substituted with one to five halogens, and  
C<sub>1-6</sub> alkoxy, unsubstituted or substituted with one to five halogens;

15 R<sup>6</sup> is independently selected from the group consisting of tetrazolyl, thiazolyl, (CH<sub>2</sub>)<sub>n</sub>-phenyl, (CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub> cycloalkyl, and C<sub>1-6</sub> alkyl, wherein alkyl is unsubstituted or substituted with one to five halogens and wherein phenyl and cycloalkyl are unsubstituted or substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens, and wherein  
20 any methylene (CH<sub>2</sub>) carbon atom in R<sup>6</sup> is unsubstituted or substituted with one to two groups independently selected from halogen, hydroxy, C<sub>1-4</sub> alkyl, and C<sub>1-4</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens;

each R<sup>7</sup> is hydrogen or R<sup>6</sup>;

25 R<sup>8</sup>, R<sup>9</sup> and R<sup>10</sup> are each independently selected from the group consisting of  
hydrogen,  
cyano,  
carboxy,  
30 C<sub>1-6</sub> alkyloxycarbonyl,  
C<sub>1-10</sub> alkyl, unsubstituted or substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkoxy, carboxy, C<sub>1-6</sub> alkyloxycarbonyl, and phenyl-C<sub>1-3</sub> alkoxy, wherein alkoxy is unsubstituted or substituted with one to five halogens,

(CH<sub>2</sub>)<sub>n</sub>-aryl, wherein aryl is unsubstituted or substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens,

5 (CH<sub>2</sub>)<sub>n</sub>-heteroaryl, wherein heteroaryl is unsubstituted or substituted with one to three substituents independently selected from hydroxy, halogen, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens,

10 (CH<sub>2</sub>)<sub>n</sub>-heterocyclyl, wherein heterocyclyl is unsubstituted or substituted with one to three substituents independently selected from oxo, hydroxy, halogen, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens,

15 (CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub> cycloalkyl, wherein cycloalkyl is unsubstituted or substituted with one to three substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens, and

20 (CH<sub>2</sub>)<sub>n</sub>CONR<sup>4</sup>R<sup>5</sup>, wherein R<sup>4</sup> and R<sup>5</sup> are independently selected from the group consisting of hydrogen, tetrazolyl, thiazolyl, (CH<sub>2</sub>)<sub>n</sub>-phenyl, (CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub> cycloalkyl, and C<sub>1-6</sub> alkyl, wherein alkyl is unsubstituted or substituted with one to five halogens and wherein phenyl and cycloalkyl are unsubstituted or substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens;

25 or R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are attached form a heterocyclic ring selected from azetidine, pyrrolidine, piperidine, piperazine, and morpholine wherein said heterocyclic ring is unsubstituted or substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens;

30 wherein any methylene (CH<sub>2</sub>) carbon atom in R<sup>8</sup>, R<sup>9</sup> or R<sup>10</sup> is unsubstituted or substituted with one to two groups independently selected from halogen, hydroxy, and C<sub>1-4</sub> alkyl unsubstituted or substituted with one to five halogens;

with the proviso that when X is N, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> are hydrogen, R<sup>8</sup> or R<sup>9</sup> is

hydrogen;

cyano;

C<sub>1-10</sub> alkyl, unsubstituted or substituted with one to five substituents selected from:

(1) halogen,

(2) hydroxy,

(3) phenyl, optionally substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are optionally substituted with one to five halogens,

(4) naphthyl, optionally substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are optionally substituted with one to five halogens,

(5) CO<sub>2</sub>H,

(6) CO<sub>2</sub>C<sub>1-6</sub> alkyl,

(7) CONR<sup>11</sup>R<sup>12</sup>, wherein R<sup>11</sup> and R<sup>12</sup> are independently selected from the group consisting of hydrogen, tetrazolyl, phenyl, C<sub>3-6</sub> cycloalkyl and C<sub>1-6</sub> alkyl, wherein alkyl is optionally substituted with one to six substituents independently selected from halogen and phenyl, wherein the phenyl or C<sub>3-6</sub> cycloalkyl being R<sup>11</sup> or R<sup>12</sup> or the optional phenyl substituent on C<sub>1-6</sub> alkyl are optionally substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, said C<sub>1-6</sub> alkyl and C<sub>1-6</sub> alkoxy being optionally substituted with one to five halogens,

or wherein R<sup>11</sup> and R<sup>12</sup> are optionally joined to form a ring selected from pyrrolidine, piperidine and morpholine;

phenyl, which is unsubstituted or substituted with one to five substituents independently selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, hydroxy, and halogen, wherein alkyl and alkoxy are optionally substituted with one to five halogens;

naphthyl, which is unsubstituted or substituted with one to five substituents independently selected from C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, hydroxy, and halogen, wherein alkyl and alkoxy are optionally substituted with one to five halogens;

CO<sub>2</sub>H;

C<sub>1-6</sub> alkyloxycarbonyl;

CONR<sup>11</sup>R<sup>12</sup>; or

C<sub>3-6</sub> cycloalkyl, which is optionally substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are optionally substituted with one to five halogens; and when X is CR<sup>2</sup> and

5 R<sup>2</sup> is

hydrogen,

cyano,

C<sub>1-10</sub> alkyl, unsubstituted or substituted with one to five halogens,

(CH<sub>2</sub>)<sub>n</sub>-phenyl, which is unsubstituted or substituted with one to five substituents

10 independently selected from halogen, cyano hydroxy, R<sup>13</sup>, OR<sup>13</sup>, NHSO<sub>2</sub>R<sup>13</sup>, SO<sub>2</sub>R<sup>13</sup>, CO<sub>2</sub>H, and C<sub>1-6</sub> alkyloxycarbonyl, wherein R<sup>13</sup> is C<sub>1-6</sub> alkyl,

unsubstituted or substituted with one to five halogens; or

a 5- or 6-membered heterocycle which may be saturated or unsaturated comprising one to four heteroatoms independently selected from N, S and O, the heterocycle being

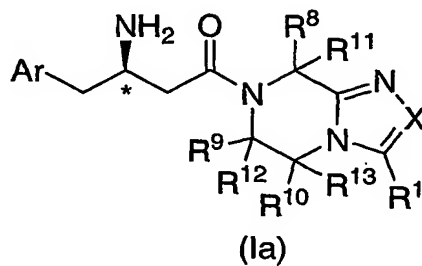
15 unsubstituted or substituted with one to three substituents independently selected from oxo, hydroxy, halogen, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are optionally substituted with one to five halogens;

then in both cases R<sup>1</sup> is not

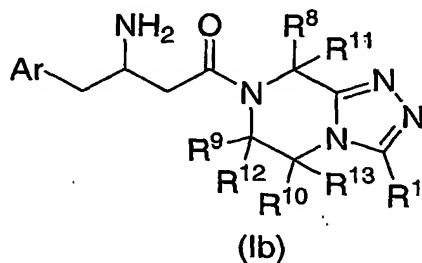
- 20 (3) hydrogen,
- (4) cyano,
- (3) C<sub>1-10</sub> alkyl, unsubstituted or substituted with one to five halogens,
- (4) (CH<sub>2</sub>)<sub>n</sub>-phenyl, which is unsubstituted or substituted with one to five substituents independently selected from halogen, cyano hydroxy, R<sup>13</sup>, OR<sup>13</sup>, NHSO<sub>2</sub>R<sup>13</sup>,
- 25 SO<sub>2</sub>R<sup>13</sup>, CO<sub>2</sub>H, and C<sub>1-6</sub> alkyloxycarbonyl, wherein R<sup>13</sup> is C<sub>1-6</sub> alkyl,
- unsubstituted or substituted with one to five halogens; or
- (5) a 5- or 6-membered heterocycle which may be saturated or unsaturated comprising one to four heteroatoms independently selected from N, S and O, the heterocycle being unsubstituted or substituted with one to three substituents
- 30 independently selected from oxo, hydroxy, halogen, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are optionally substituted with one to five halogens.

R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> are each independently hydrogen or C<sub>1-6</sub> alkyl.

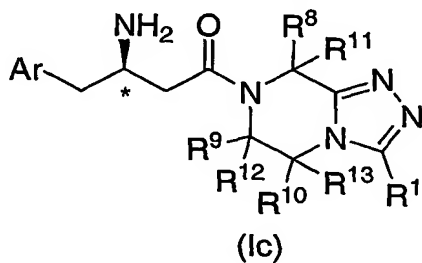
2. The compound of Claim 1 of the structural formula Ia wherein the carbon atom marked with an \* has the *S* configuration



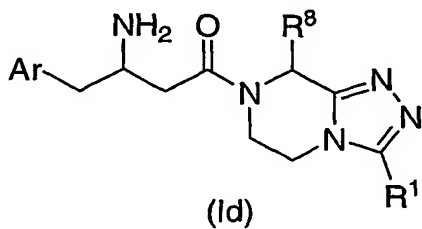
- 5 3. The compound of Claim 1 of the structural formula Ib



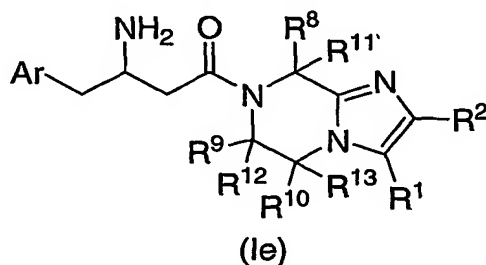
4. The compound of Claim 3 of the structural formula Ic wherein the carbon atom marked with an \* has the *R* configuration



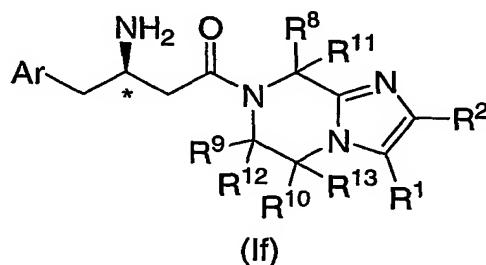
- 10 5. The compound of Claim 3 of the structural formula Id:



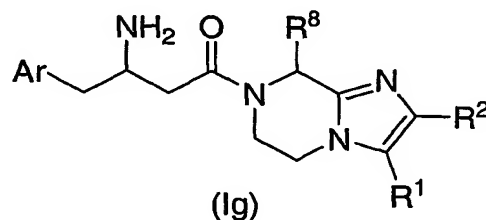
6. The compound of Claim 5 wherein R<sup>8</sup> is hydrogen.
7. The compound of Claim 1 of the structural formula Ie



- 5                      8. The compound of Claim 7 of the structural formula If wherein the carbon atom marked with an \* has the *R* configuration



9. The compound of Claim 7 of the structural formula Ig



- 10                      10. The compound of Claim 9 wherein R<sup>8</sup> is hydrogen.
11. The compound of Claim 1 wherein R<sup>3</sup> is selected from the group consisting of hydrogen, fluoro, chloro, bromo, trifluoromethyl, and methyl.
- 15                      12. The compound of Claim 11 wherein R<sup>3</sup> is selected from the group consisting of hydrogen, fluoro, and chloro.



13. The compound of Claim 1 wherein R<sup>1</sup> is selected from the group consisting of

hydrogen,

5 halogen,

C<sub>1-6</sub> alkyl, wherein alkyl is unsubstituted or substituted with one to five substituents independently selected from halogen or hydroxy,

C<sub>1-6</sub> alkoxy, wherein alkoxy is unsubstituted or substituted with one to five substituents independently selected from halogen or hydroxy,

10 C<sub>1-6</sub> alkylthio, wherein alkylthio is unsubstituted or substituted with one to five substituents independently selected from halogen or hydroxy,

C<sub>2-6</sub> alkenyl, wherein alkenyl is unsubstituted or substituted with one to five substituents independently selected from halogen or hydroxy,

(CH<sub>2</sub>)<sub>n</sub>COOH,

15 (CH<sub>2</sub>)<sub>n</sub>COOC<sub>1-6</sub> alkyl,

(CH<sub>2</sub>)<sub>n</sub>CONR<sup>4</sup>R<sup>5</sup>, wherein R<sup>4</sup> and R<sup>5</sup> are independently selected from the group consisting of hydrogen, tetrazolyl, thiazolyl, (CH<sub>2</sub>)<sub>n</sub>-phenyl, (CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub> cycloalkyl, and C<sub>1-6</sub> alkyl, wherein alkyl is unsubstituted or substituted with one to five halogens and wherein phenyl and cycloalkyl are unsubstituted or

20 substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens;

or R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are attached form a heterocyclic ring selected from azetidine, pyrrolidine, piperidine, piperazine, and

25 morpholine wherein said heterocyclic ring is unsubstituted or substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens,

(CH<sub>2</sub>)<sub>n</sub>-NR<sup>4</sup>R<sup>5</sup>,

30 (CH<sub>2</sub>)<sub>n</sub>-NR<sup>7</sup>COR<sup>7</sup>,

(CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub> cycloalkyl, wherein cycloalkyl is unsubstituted or substituted with one to three substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens, and

(CH<sub>2</sub>)<sub>n</sub>-aryl, wherein aryl is unsubstituted or substituted with one to five substituents independently selected from halogen, CN, hydroxy, NR<sup>7</sup>SO<sub>2</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup>, CO<sub>2</sub>H, C<sub>1-6</sub> alkyloxycarbonyl, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens; wherein any methylene (CH<sub>2</sub>) carbon atom in R<sup>1</sup> or R<sup>2</sup> is unsubstituted or substituted with one to two groups independently selected from halogen, hydroxy, and C<sub>1-4</sub> alkyl unsubstituted or substituted with one to five halogens.

14. The compound of Claim 13 wherein R<sup>1</sup> is selected from the group consisting of

- hydrogen,
- methyl,
- ethyl,
- trifluoromethyl,
- CH<sub>2</sub>CF<sub>3</sub>,
- CF<sub>2</sub>CF<sub>3</sub>,
- phenyl,
- cyclopropyl,
- fluoro,
- chloro,
- bromo,
- vinyl,
- amino,
- isopropylamino,
- acetylamino,
- 2,2,2-trifluoroacetylamino,
- tert*-butylaminocarbonyl,
- ethoxycarbonyl,
- carboxy,
- 1-hydroxyethyl,
- methoxy,
- isopropoxy, and
- methylthio.

15. The compound of Claim 1 wherein R<sup>2</sup> is selected from the group consisting of  
R<sup>2</sup> is selected from the group consisting of

- 5 hydrogen,  
halogen,  
C<sub>1-6</sub> alkyl, wherein alkyl is unsubstituted or substituted with one to five substituents  
independently selected from halogen or hydroxy,  
C<sub>2-6</sub> alkenyl, wherein alkenyl is unsubstituted or substituted with one to five substituents  
10 independently selected from halogen or hydroxy,  
(CH<sub>2</sub>)<sub>n</sub>COOH,  
(CH<sub>2</sub>)<sub>n</sub>COOC<sub>1-6</sub> alkyl,  
(CH<sub>2</sub>)<sub>n</sub>CONR<sup>4</sup>R<sup>5</sup>, wherein R<sup>4</sup> and R<sup>5</sup> are independently selected from the group  
consisting of hydrogen, tetrazolyl, thiazolyl, (CH<sub>2</sub>)<sub>n</sub>-phenyl, (CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub>  
15 cycloalkyl, and C<sub>1-6</sub> alkyl, wherein alkyl is unsubstituted or substituted with one  
to five halogens and wherein phenyl and cycloalkyl are unsubstituted or  
substituted with one to five substituents independently selected from halogen,  
hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted  
or substituted with one to five halogens;  
20 or R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are attached form a  
heterocyclic ring selected from azetidine, pyrrolidine, piperidine, piperazine, and  
morpholine wherein said heterocyclic ring is unsubstituted or substituted with one  
to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and  
C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one  
25 to five halogens,  
(CH<sub>2</sub>)<sub>n</sub>-NR<sup>4</sup>R<sup>5</sup>,  
(CH<sub>2</sub>)<sub>n</sub>-NR<sup>7</sup>COR<sup>7</sup>,  
(CH<sub>2</sub>)<sub>n</sub>-COR<sup>6</sup>,  
(CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub> cycloalkyl, wherein cycloalkyl is unsubstituted or substituted with one to  
three substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and  
30 C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one  
to five halogens, and  
(CH<sub>2</sub>)<sub>n</sub>-aryl, wherein aryl is unsubstituted or substituted with one to five substituents  
independently selected from halogen, CN, hydroxy, NR<sup>7</sup>SO<sub>2</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup>, CO<sub>2</sub>H,

C<sub>1-6</sub> alkyloxycarbonyl, C<sub>1-6</sub> alkyl, and  
C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one  
to five halogens;  
wherein any methylene (CH<sub>2</sub>) carbon atom in R<sup>1</sup> or R<sup>2</sup> is unsubstituted or substituted  
5 with one to two groups independently selected from halogen, hydroxy, and C<sub>1-4</sub> alkyl  
unsubstituted or substituted with one to five halogens.

16. The compound of Claim 15 wherein R<sup>2</sup> is selected from the group  
consisting of

10 hydrogen  
trifluoromethyl,  
phenyl,  
cyclopropyl,  
carboxy,  
15 ethoxycarbonyl,  
dimethylaminocarbonyl,  
aminocarbonyl,  
morpholin-4-ylcarbonyl,  
*tert*-butylaminocarbonyl,  
20 cyclopropylcarbonyl,  
tetrazol-5-ylaminocarbonyl, and  
2,2,2-trifluoroacetyl amino.

17. The compound of Claim 1 wherein R<sup>8</sup>, R<sup>9</sup>, and R<sup>10</sup> are each  
25 independently selected from the group consisting of  
hydrogen,  
C<sub>1-6</sub> alkyl, unsubstituted or substituted with one to five substituents independently  
selected from halogen, hydroxy, C<sub>1-6</sub> alkoxy, and phenyl-C<sub>1-3</sub> alkoxy, wherein  
alkoxy is unsubstituted or substituted with one to five halogens,  
30 (CH<sub>2</sub>)<sub>n</sub>-phenyl, wherein phenyl is unsubstituted or substituted with one to five  
substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub>  
alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five  
halogens,

(CH<sub>2</sub>)<sub>n</sub>-heteroaryl, wherein heteroaryl is unsubstituted or substituted with one to three substituents independently selected from hydroxy, halogen, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens,

5 (CH<sub>2</sub>)<sub>n</sub>-heterocyclyl, wherein heterocyclyl is unsubstituted or substituted with one to three substituents independently selected from oxo, hydroxy, halogen, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens, and

10 (CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub> cycloalkyl, wherein cycloalkyl is unsubstituted or substituted with one to three substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are optionally substituted with one to five halogens;

wherein any methylene (CH<sub>2</sub>) carbon atom in R<sup>8</sup>, R<sup>9</sup>, or R<sup>10</sup> is unsubstituted or substituted with one to two groups independently selected from halogen, hydroxy, and C<sub>1-4</sub> alkyl unsubstituted or substituted with one to five halogens;

15 and R<sup>11</sup>, R<sup>12</sup>, and R<sup>13</sup> are each independently hydrogen or methyl.

18. The compound of Claim 17 wherein R<sup>8</sup>, R<sup>9</sup>, and R<sup>10</sup> are each independently selected from the group consisting of

20 hydrogen,

C<sub>1-3</sub> alkyl, unsubstituted or substituted with one to three substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkoxy, and phenyl-C<sub>1-3</sub> alkoxy, wherein alkoxy is unsubstituted or substituted with one to five halogens,

25 (CH<sub>2</sub>)<sub>n</sub>-phenyl, wherein phenyl is unsubstituted or substituted with one to five substituents independently selected from halogen, hydroxy, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are unsubstituted or substituted with one to five halogens,

30 (CH<sub>2</sub>)<sub>n</sub>-heteroaryl, wherein heteroaryl is unsubstituted or substituted with one to three substituents independently selected from hydroxy, halogen, C<sub>1-6</sub> alkyl, and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are optionally substituted with one to five halogens,

(CH<sub>2</sub>)<sub>n</sub>-heterocyclyl, wherein heterocyclyl is unsubstituted or substituted with one to three substituents independently selected from oxo, hydroxy, halogen, C<sub>1-6</sub> alkyl,

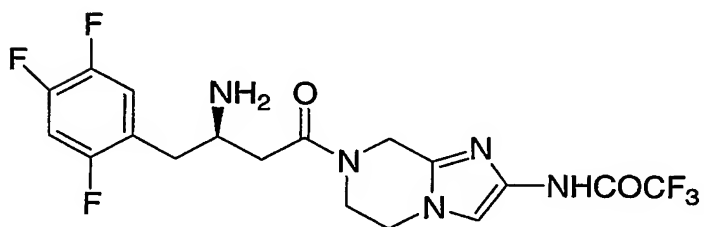
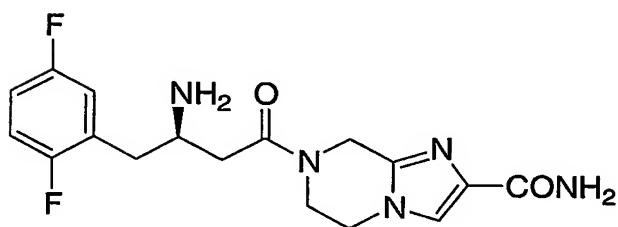
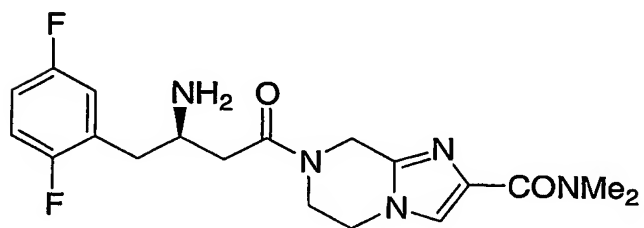
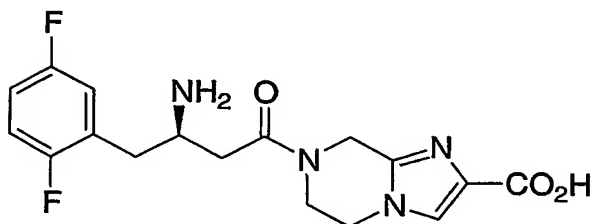
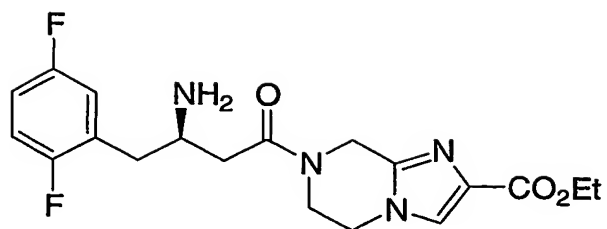
and C<sub>1-6</sub> alkoxy, wherein alkyl and alkoxy are optionally substituted with one to five halogens, and  
(CH<sub>2</sub>)<sub>n</sub>-C<sub>3-6</sub> cyclopropyl;  
wherein any methylene (CH<sub>2</sub>) carbon atom in R<sup>8</sup>, R<sup>9</sup>, or R<sup>10</sup> is unsubstituted or  
5 substituted with one to two groups independently selected from halogen, hydroxy, and  
C<sub>1-4</sub> alkyl unsubstituted or substituted with one to five halogens;  
and R<sup>11</sup>, R<sup>12</sup>, and R<sup>13</sup> are each independently hydrogen or methyl.

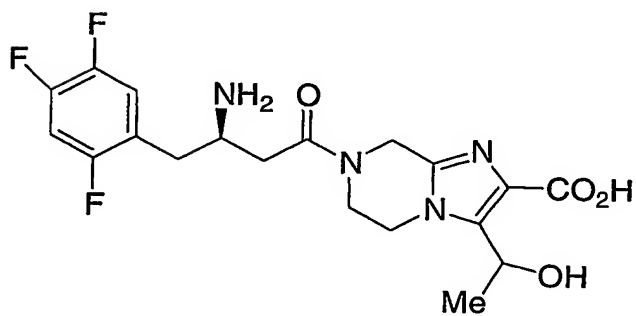
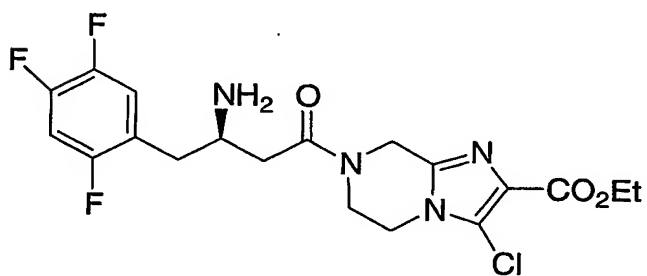
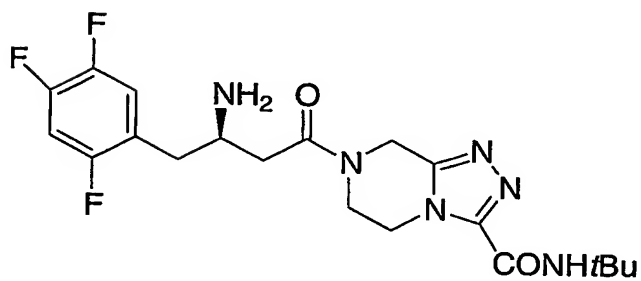
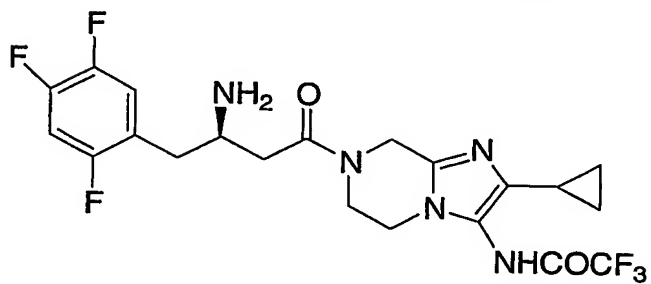
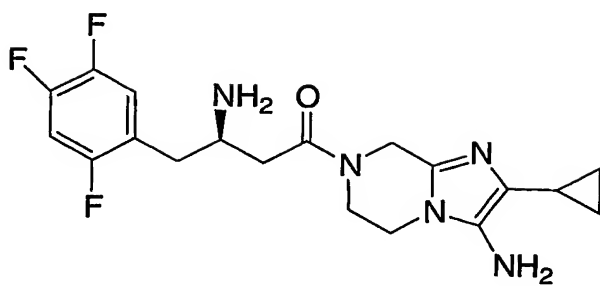
19. The compound of Claim 18 wherein R<sup>8</sup>, R<sup>9</sup>, and R<sup>10</sup> are each  
10 independently selected from the group consisting of  
hydrogen,  
CH<sub>3</sub>,  
CH<sub>2</sub>CH<sub>3</sub>,  
CH<sub>2</sub>-cyclopropyl,  
15 CHF-cyclopropyl,  
CH(OH)-cyclopropyl,  
CH<sub>2</sub>OCH<sub>2</sub>Ph,  
CH<sub>2</sub>(4-F-Ph),  
CH<sub>2</sub>(4-CF<sub>3</sub>-Ph), and  
20 CH<sub>2</sub>-[1,2,4]triazol-4-yl;  
and R<sup>11</sup>, R<sup>12</sup>, and R<sup>13</sup> are each independently hydrogen or methyl.

20. The compound of Claim 18 wherein R<sup>9</sup>, R<sup>10</sup>, R<sup>12</sup>, and R<sup>13</sup> are hydrogen.

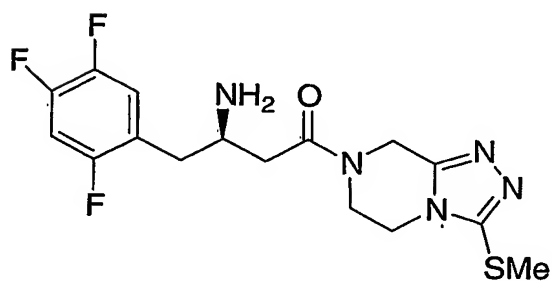
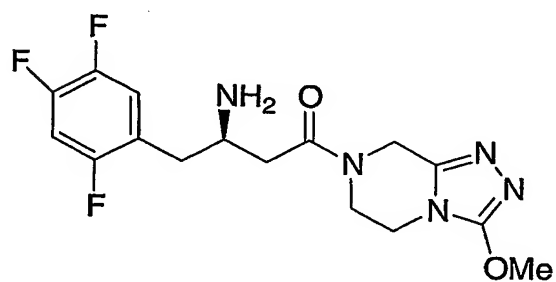
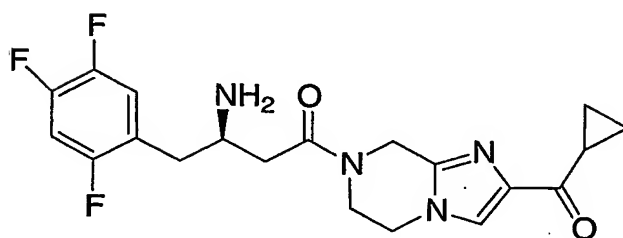
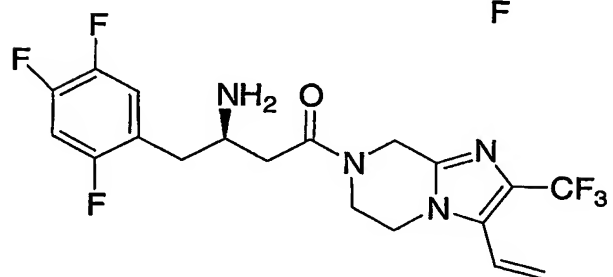
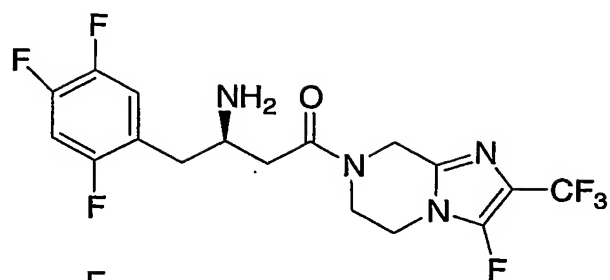
21. The compound of Claim 20 wherein R<sup>8</sup> and R<sup>11</sup> are hydrogen.

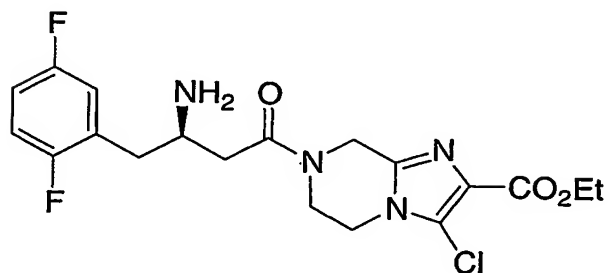
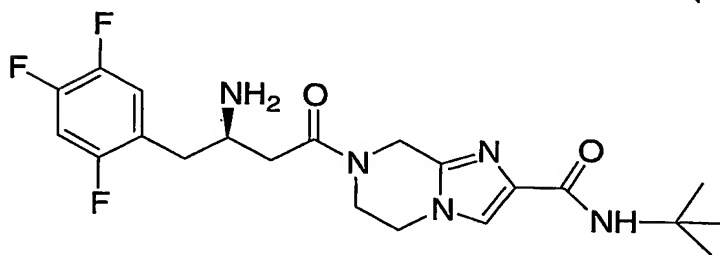
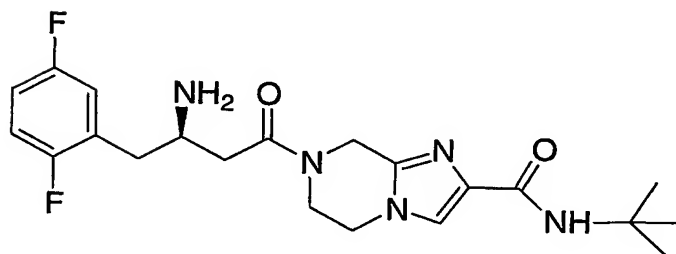
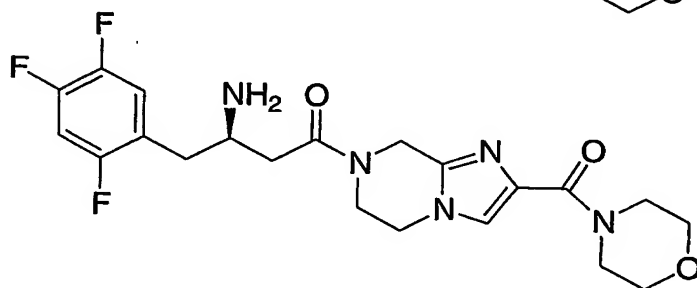
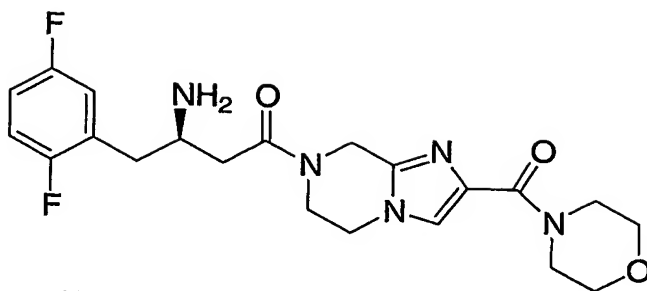
22. The compound of Claim 21 which is selected from the group consisting  
of:

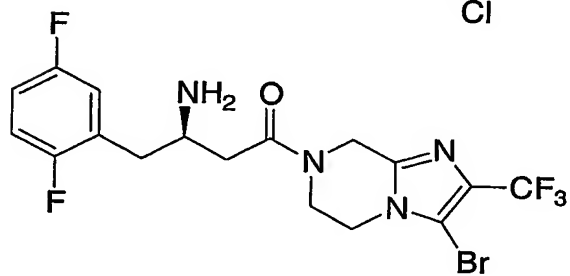
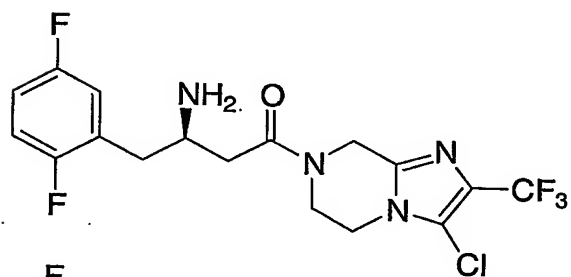
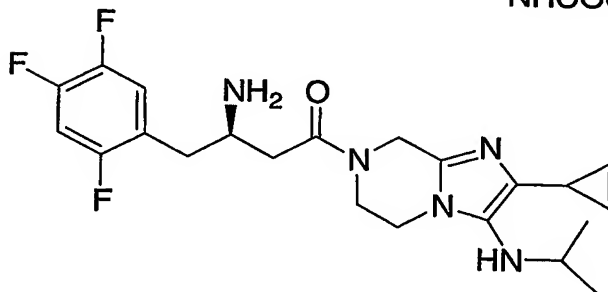
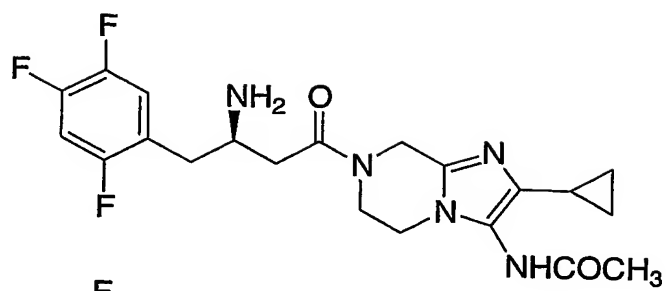


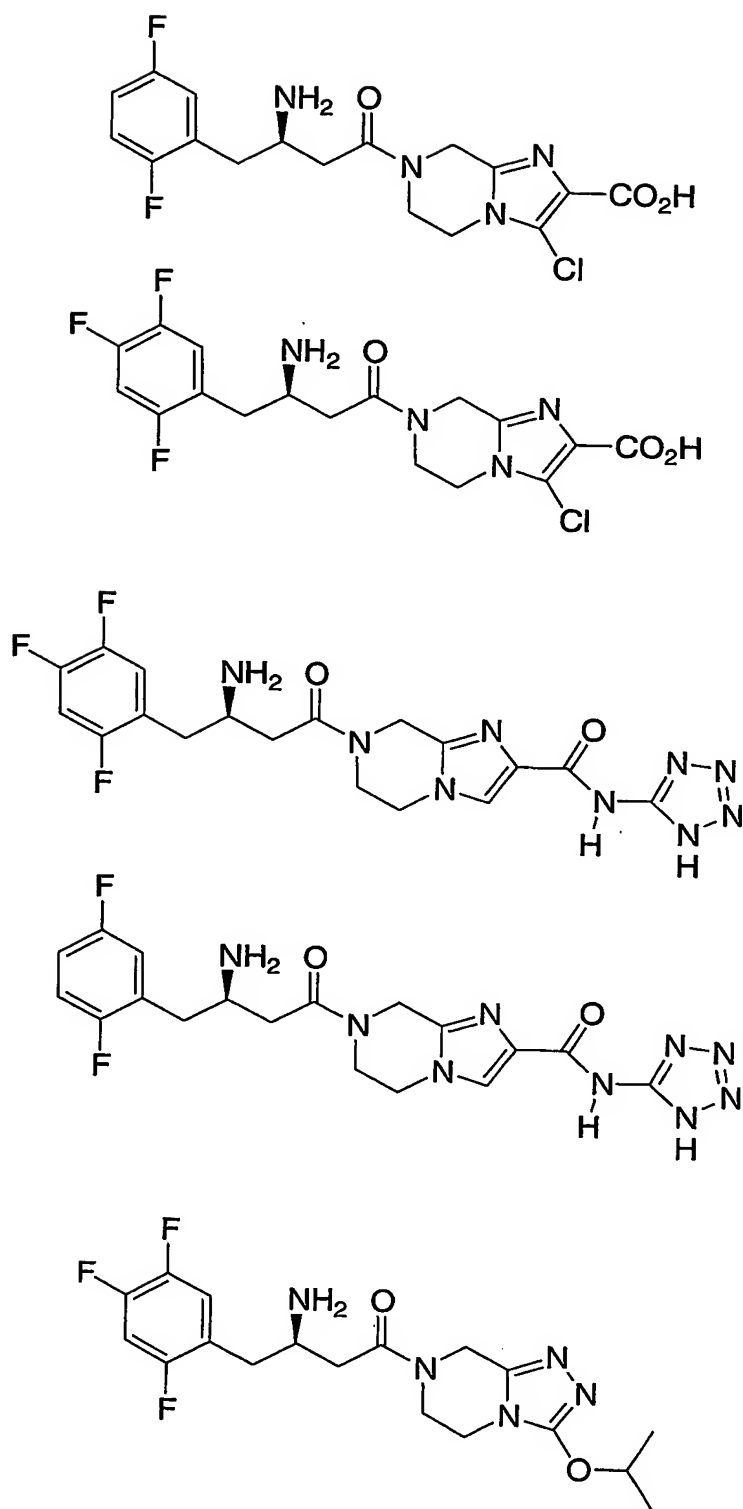


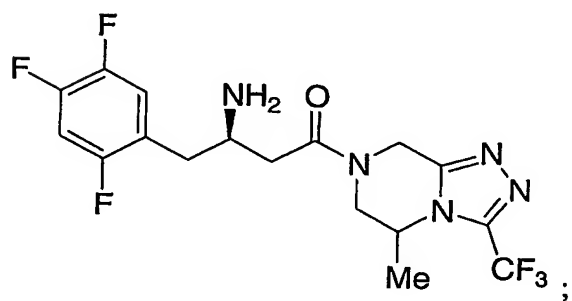
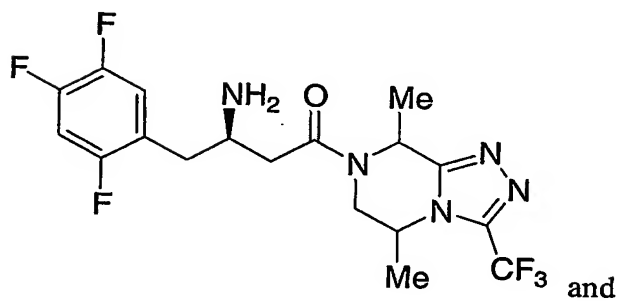
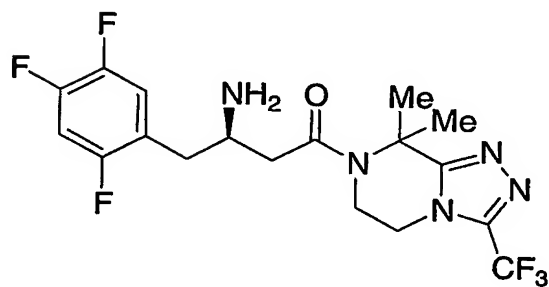
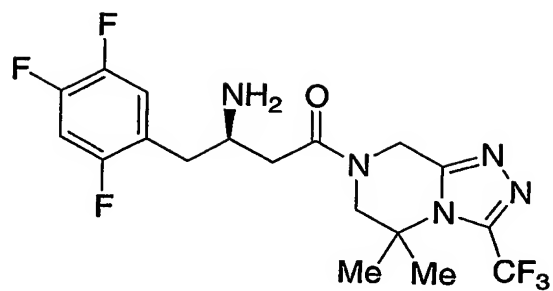












5 or a pharmaceutically acceptable salt thereof.

23. A pharmaceutical composition which comprises a compound of Claim 1 and a pharmaceutically acceptable carrier.

24. A method for inhibiting dipeptidyl peptidase-IV enzyme activity in a mammal in need thereof which comprises the administration to the mammal of an effective amount of a compound of Claim 1.

5

25. A method for treating diabetes in a mammal in need thereof which comprises the administration to the mammal of a therapeutically effective amount of a compound of Claim 1.

10 26. A method for treating non-insulin dependent (Type 2) diabetes in a mammal in need thereof which comprises the administration to the mammal of a therapeutically effective amount of a compound of Claim 1.

15 27. A method for treating hyperglycemia in a mammal in need thereof which comprises the administration to the mammal of a therapeutically effective amount of a compound of Claim 1.

20 28. A method for treating obesity in a mammal in need thereof which comprises the administration to the mammal of a therapeutically effective amount of a compound of Claim 1.

25 29. A method for treating one or more lipid disorders selected from the group of dyslipidemia, hyperlipidemia, hypertriglyceridemia, hypercholesterolemia, low HDL and high LDL in a mammal in need thereof which comprises the administration to the mammal of a therapeutically effective amount of a compound of Claim 1.

30 30. A method for treating in a mammal in need thereof one or more conditions selected from the group consisting of (1) hyperglycemia, (2) low glucose tolerance, (3) insulin resistance, (4) obesity, (5) lipid disorders, (6) dyslipidemia, (7) hyperlipidemia, (8) hypertriglyceridemia, (9) hypercholesterolemia, (10) low HDL levels, (11) high LDL levels, (12) atherosclerosis and its sequelae, (13) vascular restenosis, (14) irritable bowel syndrome, (15) inflammatory bowel disease, including Crohn's disease and ulcerative colitis, (16) other inflammatory conditions, (17) pancreatitis, (18) abdominal obesity, (19) neurodegenerative disease, (20) retinopathy, (21) nephropathy, (22) neuropathy, (23) Syndrome X, (24) ovarian

hyperandrogenism (polycystic ovarian syndrome), and other disorders where insulin resistance is a component, wherein the method comprises the administration to the mammal a therapeutically effective amount of a compound of Claim 1.

5                   31.     The pharmaceutical composition of Claim 23 further comprising one or more additional active ingredients selected from the group consisting of:

(a) a second dipeptidyl peptidase IV inhibitor;

10                   (b) an insulin sensitizer selected from the group consisting of a PPAR $\gamma$  agonist, a PPAR $\alpha/\gamma$  dual agonist, a PPAR $\alpha$  agonist, a biguanide, and a protein tyrosine phosphatase-1B inhibitor;

(c) an insulin or insulin mimetic;

(d) a sulfonylurea or other insulin secretagogue;

(e) an  $\alpha$ -glucosidase inhibitor;

(f) a glucagon receptor antagonist;

15                   (g) GLP-1, a GLP-1 mimetic, or a GLP-1 receptor agonist;

(h) GIP, a GIP mimetic, or a GIP receptor agonist;

(i) PACAP, a PACAP mimetic, or a PACAP receptor agonist;

20                   (j) a cholesterol lowering agent such as (i) HMG-CoA reductase inhibitor, (ii) sequestrant, (iii) nicotiny alcohol, nicotinic acid or a salt thereof, (iv) PPAR $\alpha$  agonist, (v) PPAR $\alpha/\gamma$  dual agonist, (vi) inhibitor of cholesterol absorption, (vii) acyl CoA:cholesterol acyltransferase inhibitor, and (viii) anti-oxidant;

(k) a PPAR $\delta$  agonist;

(l) an antiobesity compound;

(m) an ileal bile acid transporter inhibitor;

25                   (n) an anti-inflammatory agent; and

(o) an antihypertensive agent.

30                   32.     The pharmaceutical composition of Claim 31 wherein the PPAR $\alpha/\gamma$  dual agonist is KRP-297.

33.     A method of treating diabetes in a mammal in need thereof comprising administering to the mammal a therapeutically effective amount of a compound of Claim 1 in combination with the PPAR $\alpha/\gamma$  dual agonist KRP-297.